

ABSTRACT

Alkaline-containing cleaning compositions and method of using the cleaning
5 compositions for cleaning microelectronic substrates, particularly FPD
microelectronic substrates, which compositions are able to essentially completely
clean such substrates and produce essentially no metal corrosion of the metal
elements of such substrates. The alkaline-containing cleaning compositions of this
invention have (a) a nucleophilic amine, (b) a moderate to weak acid having a
10 strength expressed as a "pKa" for the dissociation constant in aqueous solution of
from about 1.2 to about 8, (c) a compound selected from an aliphatic alcohol, diol,
polyol or aliphatic glycol ether, and (d) an organic co-solvent preferably having a
solubility parameter of from about 8 to about 15. The cleaning compositions of this
invention will have an amount of weak acid such that the equivalent mole ratio of
15 acid groups to amine groups is greater than .75 and may range up to and beyond a
ratio of 1, such as for example a ratio of 1.02 or more. The pH of the alkaline-
containing cleaning compositions of this invention will be from about pH 4.5 to 9.5.

20